21st Annual Health Sciences Tax Conference

New horizons – a view toward the future of the health sciences industry

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Topics for today

► Introduction
► Points of view
► Deep dives
► Closing observations and Q&A
Introduction –
John Distefano
Path less traveled
History of the future

- Society and culture
- Demographics
- Science and technology
- Capital markets
- Regulation and legislation
- Market conditions
- Macro-economic forces
- Global influences
Multiple trends are driving rapid change in the landscape of health care

Innovation drivers

Multiple stakeholders

Outcomes

Quality

Value

Access to health care

Universal coverage

Hospital capacity and provider availability

Geographic footprint

Traditional industry stakeholders

Internal stakeholders

External stakeholders

Transformative partnerships

Consumer generated value

Open models

Incentives

Coordinated, accountable care

Disease/chronic care mgmt.

Patient and family involvement

Patient data/clinical decision support

Mobility, wireless and social media

New therapies, devices and delivery

Disruptive technologies

Radical collaboration

Access to health care

Multiple stakeholders

Incentives

Outcomes

Quality

Value
Doing what matters, no matter what
What we have to get right – “no regret moves”

Health care reform
expanded care management

ICD-10

Meaningful use

Digital clinical information

Business analytics
Comparative effectiveness research
Clinical transformation

Evidence-based medicine

Accountable care organizations (ACO)
Patient-centered medical homes (PCMH)

Value-based reimbursement
What we have to get right
From fee for service to quality and outcomes

Aspiration:
Coordinated integrated care
Patient-focused
Holistic payment model
Population context
Standardized

Competitive advantage established; drives expanding base of covered lives served
Advanced risk-sharing arrangements produce recurring, predictable cost and revenue streams
Transformation rooted in critical mass; clinical practices viewed as leading practice
Installation of enterprise tools complete; data governance and management produce “single source of truth”

Narrow network products based on ACO panel; ACO products offered on exchanges
Confidence in capitation and risk pool arrangements
Clinical councils expand to broader membership of PCPs and selected specialists; reduction in disparity of treatment practices among staff
Population and outcomes reporting matures; roadmap implementation underway

Expand pilots to employer contracts and 2–3 payors
Multiple payment bundling arrangements; material “at risk” revenue
Maturing teams of primary care physicians (PCPs), case navigators and analysts; recurring comparison of outcomes to standardized evidence-based practices
Stabilized process for data collection and reporting; roadmaps for mature enterprise tools and data management

Form and operate ACO pilots
Payment-neutral constructs to support experimentation and infrastructure development
Monthly desktop applications aggregating and analyzing data
Clinical councils expand to broader membership of PCPs and selected specialists; reduction in disparity of treatment practices among staff

Market engagement
Payment models
Clinical navigation
Automated reporting

Today:
Fee for service
Episode-based care
Clinician focused in silos
Individual context
High variability

Ernst & Young
Quality In Everything We Do
What we have to get right
Balancing models that should complement – not compete

► Patient-centered medical home provides the essential primary care foundation required to succeed
► Accountable care models provide the broader delivery system infrastructure necessary to realize full potential of patient-centered primary care

► ACO will not succeed without a strong foundation of high-performance primary care
► PCP shortage and outdated infrastructure of most primary care practices may limit successful implementation

► No direct incentives to other providers to work collaboratively with PCP to achieve goals of care integration and improved health outcomes
► Primary care practices do not have financial arrangements that allow them to share in savings

Patient centricity

Accountable care
Point of view –
Dr. Bill Fera, MD
It’s not easy
Components of an accountable care organization

Organization structure of an effective ACO

- Strategic imperative
- Learning and change oriented culture
- Membership composition

Strategic

Operational effectiveness

- Financial viability
- Strength of network
- Alignment of incentives
- Physician engagement
- Medical management
- Patient experience
- Risk management

Operational effectiveness

Infrastructure

- IT/EHR
- Outcomes reporting
- Business intelligence
- Financial systems
- Systems engineering tools

Infrastructure
IT infrastructure

Access
- Physician view
- Nurse View
- Patient view
- Specialty view
- Care coordinator view

Analyze
- Analytics platform

Aggregate/adjudicate
- EDW
- ACIS
- HCIS
- ACIS
- HCIS

Acquire
- Lab
- RIS
- ADT
- PACS
- Cardiology

Server and network infrastructure
Population management

**Patients**

- Preventive (35%)
- Mild disease (30%)
- Moderate/chronic disease (25%)
- Trauma/catastrophic (10%)

**Stages of care**

- **Preventive**
  - Physician P4P
  - Automated messaging
  - Patient portal
- **Mild disease**
  - Evidence-based education
  - Patient portal
  - Disease management
  - Lifetime radiation exposure
- **Moderate/chronic disease**
  - Evidence-based education
  - Automated biometric collection, reporting, analysis
  - Behavioral modification efforts, appropriate messaging
  - Bundled payment programs
- **Trauma/catastrophic**
  - Automated biometric collection, reporting, analysis
  - Home monitoring
  - Health coaching
  - PCMH

**Tools**

- **Preventive**
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**Measures**

- **Preventive**
  - HEDIS guidelines
    - Breast screening
    - Immunizations
    - Colonoscopy
    - % healthy members
- **Mild disease**
  - Imaging events PMPM
    - HEDIS guidelines
    - % members with disease under control
    - Incidence of back surgery
- **Moderate/chronic disease**
  - Incidence of hospitalization
    - % follow-up 3d after d/c
    - HEDIS guidelines
    - 30 day readmission
    - Out-of-network utilization
    - Cost per procedure
- **Trauma/catastrophic**
  - Incidence of hospitalization
    - % utilization m-o-m, y-o-y
    - Internal resource utilization
    - % members with DNR
    - HEDIS guidelines

**Medical resource usage**

- **Self service**
- **Facilitated**
- **Fully engaged**

**Metrics**

- KPIs
- Information

**Views**

- PCMH
- Executive
- Operational
- Patient
- Physician
Collaboration – extending payor IT infrastructure

► Health information exchange
► Risk scoring
  ► Identification and stratification
► Predictive modeling
► Care management
► Case management
► Utilization management
Collaborative patient-centered medical home

- Increase patient satisfaction
- Increase caregiver satisfaction
- Lower plan administrative costs
- Manage medical costs
- Decrease utilization
- Increase provider satisfaction
- Improve member health and outcomes
- Increase patient advocacy
Point of view –
Kim Ramko
Pharma 3.0

Drivers of change

- R&D productivity
- Patent cliff
- Globalization
- Demographics
- Pricing and reimbursement
- Health care reform
- Health IT
- Consumerism
- Value mining

Business models

Pharma 1.0
Blockbuster drugs

Pharma 2.0
Diversified drug portfolios

Pharma 3.0
Healthy outcomes

Customer

Physician

Payor

Patient

From pharma’s perspective
Major advances in health outcomes ...
Three waves

1. Improved hygiene
   - Reduced infections
   - Post-surgery survival rates

2. Breakthrough drugs and devices
   - War on disease (polio, smallpox, cancer, HIV, malaria, etc.)
   - Better health, longevity

3. Behavioral changes
   - Payors, physicians, patients, companies
   - Remove inefficiencies, boost outcomes
... are changing behaviors
“Superconsumers” and “value mining”

Superconsumers
- Changing incentives
- Empowered by technology

Making health care sustainable
- Health care reforms
- Increased pressure from payors

Health outcomes

Value mining
- Determining efficacy by mining “big data”

New technologies
- Mobile health
- Electronic health records (EHR) and personal health records (PHR)
- Social media
The potential impact of behavioral change

Chronic and complex diseases

- Huge **costs**, unmet medical **needs**:
  - 75% of US health care burden, 7 out of every 10 deaths
  - Average health care costs are 5 times greater for chronic diseases
- Costs projected to **increase** sharply:
  - Aging populations
  - Lifestyle changes in emerging markets
- **Coordination** of care and **holistic** approaches needed (i.e., behavior):
  - Diet, exercise, monitoring, compliance

**Bottom line**: some of the biggest opportunities to “bend the cost curve” are in behavioral changes with respect to chronic and complex diseases.
Creating value for the patient and the payor

Mapping the value pathway for diabetes

**Intervention opportunities**
- **Education**
- **Awareness programs**
- **Annual checkup at offices and schools**
- **Use of IT to assess diabetes risk**
- **Peer-to-peer exchange of experience**
- **Social media platforms**
- **Online-disease communities**
- **Educational websites**
- **Smart phone applications**
- **Access schemes**

**Value leakages**
- **Lack of awareness and literacy**
- **Social stigma of disease**
- **Psychological issues**
- **Cost burden**
- **Negligence**
- **Addiction**

**Intervention opportunities**
- **Reminders**
- **Guidance on managing side effects**
- **Innovative drugs (smart insulins)**
- **Innovative DDD**
- **Regular glucose monitoring**
- **Lifestyle management**

**Value leakages**
- **Non-adherence to:***
  - Drug treatment
    - Oral drugs
    - Insulin
  - Lifestyle management
    - Sound mental makeup
    - Dietary control
    - Exercise
  - Self-monitoring
    - Glucose level
    - Blood pressure
  - Physician visits

**Intervention opportunities**
- **SMS, e-health**
- **Website for concordance between HCP, patient and health plan**
- **Partnership with retailers**
- **Apps for food intake management, monitoring and data management**
- **Website for preparing patients to have intelligent conversations with physicians**
Building Pharma 3.0
Six business processes

- **Connecting information**: Extracting value out of large volumes of data from diverse, unfamiliar sources
- **Radical collaboration**: Innovative collaborations with non-traditional partners to co-create value for each other and the ecosystem
- **Multiple business models**: Building and managing a portfolio of innovation models

**Business model development**: systematically experimenting with new models

**Community engagement**: engaging to add personalized value and build trust

**Information strategy**: empowering IT to guide 3.0 strategy

**Performance management**: measuring and communicating 3.0 value drivers

**Capital strategy**: adapting the capital agenda for Pharma 3.0 initiatives

**Governance, risk and controls**: embracing (and managing) risk in 3.0 initiatives
Deep dives
IT infrastructure

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Server and network infrastructure
### Understanding the numbers – and the story behind the numbers

#### Pharma 2.0

**Financial metrics**
- Market share
- Revenue
- Operating margin
- Cash flow
- Capital efficiency

**Underlying drivers**
- Total market size
- Trade promotion
- Product launches
- Customer churn
- Operating costs
- Distribution cost per unit
- Operating income and expenses
- Capital expenditures
- Net tangible assets
- Invested capital

#### Pharma 3.0

**Underlying drivers**
- Patient outcomes
- Customer experience
- Radical collaboration
- Care pathway visibility
- Patient preferences

**Underlying drivers**
- Mortality, morbidity
- Quality of life
- Pay-for-performance
- Customer satisfaction
- Customer compliance
- Information exchange with non-traditional partners
- Diverse, unstructured data sources
- Expanding access
- Health care transparency
- Patient health ownership/disease management
Pharma 3.0 is happening eHealth

Roche – InterComponentWare

Roche Diabetes Care and ICW announce Technology Partnership

Mannheim and Walldorf, Germany, 09/08/2010

Roche Diabetes Care, a global leader in diabetes care and eHealth specialist InterComponentWare (ICW) today announced a multi-year, global partnership to develop a next-generation web-based solution for efficient diabetes management.

Source: www.icw-global.com

Novartis – Proteus Biomedical

Novartis chip to help ensure bitter pills are swallowed

By Andrew Jack in London
Published: September 21 2009 23:06 | Last updated: September 21 2009 23:06

Patients who fail to pop pills on time could soon benefit from having a chip on their shoulder, under a ground-breaking electronic system being developed by Novartis, the Swiss pharmaceuticals group.

The company is testing technology that inserts a tiny microchip into each pill swallowed and sends a reminder to patients by text message if they fail to follow their doctors’ prescriptions.

Source: www.ft.com

Bayer – Nintendo

Source: www.bayerdidget.co.uk

UCB – PatientsLikeMe

See how PatientsLikeMe can help you take control of your health:

Source: www.patientslikeme.com
Pharma 3.0 is happening
Collaborations

**Personalized medical care**

**Bloomberg**

**Medco Expands in Europe With Celesio Drug Deal Aimed at Chronic Diseases**

“We can significantly reduce overall medical spending in Europe,” Snow said during a Webcast today. “We know that’s a big promise, but we have the resources to deliver, and now, through our joint venture, we have the vehicle to get the job done.”

Medco Celesio is “designed to help patients with chronic or complex conditions,” the companies said. It will start operating in Germany this year and eventually extend to the other European countries, according to the statement.

Source: www.bloomberg.com

**Pre-competitive collaborations**

**Nature reviews Drug Discovery**

Lowering industry firewalls: pre-competitive informatics initiatives in drug discovery

Source: www.nature.com

**Sanofi - Medco**

**Medco, Sanofi drug deal brings payor view to R&D**

The agreement between the two high-powered healthcare companies, announced on Wednesday, is designed to give Sanofi a broader perspective as it develops treatments, especially the views of health insurers and governments seeking evidence of a drug’s demonstrated benefits before paying for it.

Source: www.reuters.com

**Distribution**

**Pharmalot.com**

**In India, The Post Office Will Sell Pills, Too**

“While there are close to 450,000 chemists across the country, companies are willing to use the supply chain and logistic facilities of the post offices and petrol pumps to make medicines available in remote areas,” a pharma analyst said.

Source: www.pharmalot.com
Information availability

Improving the quality of information that is available to Payers, Providers, and Pharmacy Benefit Managers

- EHR Meaningful Use
- Business Intelligence
- ICD10
- Regulatory Compliance
- Clinical/Translational and Comparative Effectiveness Research
- Revenue Cycle

Regional Network

Implementation – Based on the results of the demonstration project, implement new quality standards

Pay for quality standards

Revenue Cycle 2.0

Pay for quality standards

Provider Data Warehouse

EHR, Lab, Radiology Data

Hospital Data

Patient Data

Regional Comparative Effectiveness Research Center

Clinical Thought Leaders
devolve criteria for a research program
define new quality standard

Demonstration Project – based on recommendations from Thought Leaders, define a “pilot” project and track results
Population management

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Provider matching

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